

To: Harris-Bishop, Rusty[Harris-Bishop.Rusty@epa.gov]; Nattis, Randy[Nattis.Randy@epa.gov]
Cc: Hiatt, Gerald[Hiatt.Gerald@epa.gov]; Bret Moxley[Moxley.Bret@epa.gov]; Guria, Peter[Guria.Peter@epa.gov]
From: Black, Ned
Sent: Tue 8/11/2015 11:07:50 PM
Subject: RE: Lead in Gold King Mine Release - a few comments on prelim data

Just happened to look at this email I wrote yesterday and realized I didn't include lead. It belongs in the bad actor group for ecorisk.

ned black, ph.d.

us epa r9

regional cercla ecologist

415-972-3055

Please be advised I currently have limited access to email when I am not in the office (e.g., on travel), therefore please be patient with any communication delays.

From: Black, Ned
Sent: Monday, August 10, 2015 3:33 PM
To: Harris-Bishop, Rusty; Nattis, Randy
Cc: Hiatt, Gerald; Bret Moxley
Subject: RE: Gold King Mine Release - a few comments on prelim data

Hi Rusty and Randy,

I haven't run the following through the EU yet, but I wanted to respond to Rusty sooner. I looked at the data from August 5 & 6 posted on epaosc.org for the Upper Animas River. From the perspective of acute ecotoxicity of the water to fish, amphibians (frogs), and/or stream insects, the bad actors are zinc, copper, and cadmium, in that order. A second tier of poor actors is arsenic, chromium and mercury (Hg only in Cement Creek).

For these judgment calls I used the acute toxicity values instead of the lower chronic values since my understanding conceptual exposure model was a spike of metals followed by steady

dilution. The acute values I used, which should not be viewed as endorsed by the EU yet, are (ug/L): As 340, Cd 2, Cr 16, Cu 2.3, Zn 120, and Hg 1.4.

My professional guess is that anything that was going to be killed has already died. I'm also professionally guessing that rivers in the area experience turbidity spikes on a regular basis during the monsoon (summer thunderstorm season) and that the biological community is used to hunkering down and rebounding from sedimentation events. So I think the toxicity from metals is likely the worst problem.

I'm copying Bret cause he just poked his head in my cube and said he'll be on his way to the Animas on Tuesday or Wednesday.

Cheers,

ned

ned black, ph.d.

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Please be advised I currently have limited access to email when I am not in the office (e.g., on travel), therefore please be patient with any communication delays.

From: Harris-Bishop, Rusty
Sent: Monday, August 10, 2015 12:28 PM
To: Black, Ned
Cc: Hiatt, Gerald
Subject: RE: Gold King Mine Release - Ned and Gerry on EU

Awesome!!! I hope one of you can coordinate with the Region 8 risk assessors. We need to know what the Region 8 posted data means to the public. How do they relate to drinking water . . . there is no context for what they've posted. I'm in a meeting right now with the other PIOs until around 1:00 pm PST.

Rusty



Rusty Harris-Bishop • Superfund Project Manager • Communications Liaison • US Environmental Protection Agency •

75 Hawthorne Street • San Francisco, CA • 94105 • 415.972.3140 • 415.694.8840 (c)

From: Black, Ned
Sent: Monday, August 10, 2015 1:24 PM
To: Harris-Bishop, Rusty
Cc: Hiatt, Gerald
Subject: FW: Gold King Mine Release - Ned and Gerry on EU

Hey Rusty,

Harry Allen asked me to let you know that Gerry Hiatt and I are on the EU for Gold King. I just tried your cell but couldn't get through. So far the EU is working on a coordinated set of screening standards for human health and ecological exposures, and a QASP for water and sediment sampling.

I'll try calling again in a bit.

Cheers,

ned

ned black, ph.d.

us epa r9

regional cercla ecologist

415-972-3055

Please be advised I currently have limited access to email when I am not in the office (e.g., on travel), therefore please be patient with any communication delays.

From: Allen, HarryL

Sent: Sunday, August 09, 2015 11:31 PM

To: R9_ER List; Ostrander, David; acrotty@navajo-nsn.org; idelmar@navajo-nsn.org; Yogi, David; Hubbard, Secody; Lee, Bessie; hcleveland@navajo-nsn.org; Foster, Althea; Webster, Susan; Hayes, Mark; Sandoval, Joni

Cc: ebranch@nndoj.org; bidtahnbecker@navajo-nsn.gov; russellbegaye@gmail.com; jonmnez@yahoo.com; donbenn@navajo-nsn.gov; tflora@nndoj.org; [@gmail.com](mailto:Personal Email/Ex. 6); rjoe.opvp@gmail.com; rbegay@nndoj.org; dtaylor@nndoj.org; cbradley@nndoj.org; smpollack@nndoj.org; ronnieben@navajo-nsn.gov; nnepawq@frontiernet.net; ybarney@navajopublicwater.org; Johnson, AudreyL; Li, Corine; Montgomery, Michael; Cristiano, Gina

Subject: Gold King Mine Realease - Region 9 Update 3

Please be advised that Region 9 will send daily written updates to this notification list on EPA activities, highlighting new information each day. Also, Region 9 will host a daily Navajo Nation coordination call at 4pm Navajo Time (3PM PDT) - *Next Call Monday 8/10* - Please join us. The call in number is:

Nonresponsive Conference Code

Background On August 5, 2015, an EPA team working to investigate and address contamination at the Gold King Mine in San Juan County, Colorado, unexpectedly

triggered a large release of mine waste water into the upper portions of Cement Creek. Initial estimates are that the release contained approximately one million gallons of water that was held behind unconsolidated debris near an abandoned mine portal. There were several workers at the site at the time of the breach, all were unharmed.

8/9/2015

This morning EPA is releasing a detailed data table of the sampling in Cement Creek and the upper portions of the Animas River from August 5, the date of the incident, and August 6.

EPA expects to have new data from August 7 which is currently undergoing review and will be available to the public later today. We acknowledge frustration with the turnaround time for this information. Workers at the lab and data experts are working continuously to develop the information.

The data table (attached) contains a list of analyzed constituents, largely metals, and their numeric value in micrograms per liter, which is equal to parts per billion, or ppb.

The data table released today will include updates to the information released by EPA on August 7. The incident, which occurred on August 5, caused an increase in concentrations of total and dissolved metals as the contaminated mine water moved downstream. These concentrations began to trend toward pre-event conditions by August 6. August 7 and 8 data, when it is available, will inform whether the trend towards pre-event conditions continues.

Note: Total metals analysis for water samples includes the metals content both dissolved in the water and present in the particulates in the water. Typically a dissolved metals analysis of a water sample is performed by removing the particulates with a filter, then analyzing the filtered water for metals
Site information, maps and sampling data are all available at:

http://www.epaossc.org/site/site_profile.aspx?site_id=11082. Please request a password to view the geospatial viewer for an interactive map accessed through the webpage. Standard (Claim) Form 95 was added to our website (attached).

EPA Region 9 Activities

Yesterday the President of the Navajo Nation declared a State of Emergency for the San Juan River valley. Today, the President and his staff toured the Gold King Mine Site. Rusty Harris-Bishop escorted the President the tour. The President and his staff then attended the community meeting in Durango.

The discharge has moved quickly and was observed near Kirtland, NM. Navajo officials have reacted quickly, assessing their well fields and drinking and irrigation water intake systems and issuing a precautionary "do not use" public service announcement regarding water from potentially impacted sources. Region 9 held a conference call today with Navajo Nation EPA (NNEPA) and Navajo Department of Public Safety.

Region 9 has deployed an On Scene Coordinator (OSC) to the Durango Incident Command Post to coordinate Navajo field activity updates and results with Region 8 and ensure command messages get back to Navajo officials. The Region has also deployed a Public Information Officer (PIO) to participate in a Joint Information Center (JIC), presently in Durango, with and other the affected Federal, State, County and Tribal agencies.

The Navajo EPA surface water monitoring program (Shiprock Office) collected water and sediment samples from the San Juan River - prior to the spill impact. Region 9 has provided 6 START contractors to coordinate and conduct increased sample collection and lab analysis in conjunction with NNEPA. This joint EPA/NNEPA river sampling program has commenced focusing on the San Juan between Shiprock/Hogback, NM area and Mexican Hat, UT and will continue for the foreseeable future (a static map of the sampling locations "Overview" is attached).

A Region 9 OSC will report to Farmington on Monday to assist. NNEPA also requested drinking water sampling support immediately for Navajo operated water intakes. NNEPA and USEPA drinking water experts agreed to inventory and assess water sources including private wells and intakes.

Region 9 will be providing assistance to Navajo NTUA (utilities) to deliver water to the areas impacted by the Gold King Mine Spill - starting with the Montezuma Creek area. NTUA is sourcing the water from their Sweetwater wells and filling up the service tanks in the affected areas. The ERRS contractor will be providing assistance in the transportation of these waters.

Two Community Involvement Coordinators (CICs) arrived in Farmington on Sunday. The CICs will partner with NNEPA and NN Department of Public Safety to ensure comprehensive outreach to all affected Navajo Chapters. The CICs have begun working with local Navajo Chapter officials and will participate in public meetings at Aneth and Oljato on 8/10.

OSC Robert Wise (Durango):562-889-2572

PIO Rusty Harris-Bishop (Durango):415-694-8840

OSC Randy Nattis (SF to Farmington 8/10): 415-940-1108

Harry Allen, Section Chief (Sit Report):415-218-7406

From: Allen, HarryL

Sent: Saturday, August 8, 2015 9:50 PM

To: R9_ER List

Cc: ebranch@nndoj.org; bidtahnbecker@navajo-nsn.gov; russellbegaye@gmail.com; jonmnez@yahoo.com; donbenn@navajo-nsn.gov; tflora@nndoj.org; Personal Email/Ex. 6@gmail.com; rjoe.opvp@gmail.com; rbegay@nndoj.org; dtaylor@nndoj.org; cbradley@nndoj.org; smpollack@nndoj.org; ronnieben@navajo-nsn.gov; nnepawq@frontiernet.net; ybarney@navajopublicwater.org; Ramona.nez@nndoh.org; Johnson, AudreyL; Li, Corine; Montgomery, Michael; Cristiano, Gina; Ostrander, David; acrotty@navajo-nsn.org; idelmar@navajo-nsn.org; Yogi, David; Hubbard, Secody; Lee, Bessie; Farris, Laura

Subject: Gold King Mine Realease - Region 9 Update 2

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Background

On August 5, 2015, EPA was conducting an investigation of the Gold King Mine, north of Silverton, CO. The intent of the investigation was to assess the on-going water releases from the mine, to treat mine water, and to assess the feasibility of future mine remediation. The plan was to excavate the loose material that had collapsed into the cave entry back to the timbering. During the excavation, the loose material gave way, opening the adit (mine tunnel) and spilling the water stored behind the collapsed material into Cement Creek, a tributary of the Animas River. Initial estimates are that the release consisted of approximately one million gallons of water (estimated from the dimensions of the mine adit) that was held behind unconsolidated debris near an abandoned mine portal. There were several workers at the site at the time of the breach, all were unharmed.

The first two days after the incident, the plume was moving at approximately 4 miles per hour. According to the EPA's flyover, as of the morning of Aug 8th, the plume had

reached the confluence of the San Juan River. As of 4:00 pm this afternoon, the plume had roughly reached Kirtland, New Mexico. The plume has been visually diluted and the leading edge of it is far less defined. The water is reported to be muddy with an orange tinge rather than solid orange.

Sampling data from Cement Creek and the Animas River near Silverton from Aug. 5th and 6th show pH and metals concentrations are decreasing to pre-event conditions. We continue to monitor river conditions at multiple locations to detect trends. Rain events and variations in stream flows can cause the pH and metals concentrations to rise and fall.

The data shows that pH (acidity) levels and dissolved metals in the Cement Creek and the upper portions of the Animas River spiked in the surface water at locations impacted by the contaminant plume. The data shows in the upstream locations the resident time of the plume in any one location was not long lasting. The trend downstream, in the Animas and San Juan Rivers, is expected to be similar or better than upstream, as the contaminant plume passes.

Colorado Parks and Wildlife (CPW) officials have been monitoring the effects of the spill on terrestrial and aquatic wildlife since the incident began. CPW is watching for any impacts on wildlife, whether they are acute or chronic. Fish are especially sensitive to changes in water quality. CPW is also monitoring a control station on a clean tributary.

Colorado Parks and Wildlife has indicated they are optimistic that the effects of the spill on terrestrial wildlife will be minimal.

The water in Cement Creek and the Animas River in Silverton is clearing. The adit is still discharging approximately 500 gallons per minute and the trend is that flow is decreasing. The discharge is being diverted into the newly constructed ponds and treated before it enters Cement Creek. The treatment appears to be effective.

A summary of pH and dissolved metals data is available here:

<http://epaossc.org/goldkingmine>

NEXT STEPS

- Continue to treat drainage at mine site.
- Continue to sample the Animas River corridor
- Evaluate and publish data as it is finalized.
- Continue coordination with State, Federal, Tribal and local officials as well as community members, landowners/ water users.
- Continue to provide drinking water and water testing to private well owners.

Site information, maps and sampling data are all available at:

http://www.epaossc.org/site/site_profile.aspx?site_id=11082. Please request a password to view the geospatial viewer for an interactive map accessed through the webpage.

EPA Region 9 Activities

The discharge has moved quickly and is in the vicinity of the Navajo Nation boundary, near Kirtland, NM. Navajo officials have reacted quickly, assessing their well fields and drinking and irrigation water intake systems and issuing a precautionary "do not use" public service announcement regarding water from potentially impacted sources. Region 9 held a conference call today with Navajo Nation EPA (NNEPA) and Navajo Department of Public Safety.

The Navajo EPA surface water monitoring program (Shiprock Office) collected water and sediment samples from the San Juan River yesterday - prior to the spill impact. Region 9 provided 2 START contractors and has requested 2 additional personnel to coordinate and conduct increased sample collection and lab analysis in conjunction with NNEPA. A Region 9 OSC will report to Farmington on Monday to assist. A joint EPA/NNEPA river sampling program has commenced focusing on the San Juan between Shiprock/Hogback, NM area and Mexican Hat, UT and will continue for the foreseeable future. NNEPA also requested drinking water sampling support immediately for Navajo operated water intakes. NNEPA and USEPA drinking water experts agreed to inventory and assess water sources including private wells and intakes.

Two Community Involvement Coordinators (CICs) will deploy to Farmington on Sunday. The CICs will plan to meet with local Navajo Chapter officials and prepare to host public meetings in the coming days. The CICs will partner with NNEPA and NN Department of Public Safety to ensure comprehensive outreach to all affected Navajo Chapters.

Region 9 has deployed an On Scene Coordinator (OSC) to the Durango Incident Command Post to coordinate Navajo field activity updates and results with Region 8 and ensure command messages get back to Navajo officials. The Region has also deployed a Public Information Officer (PIO) to participate in a Joint Information Center (JIC), presently in Durango, with and other the affected Federal, State, County and Tribal agencies.

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